

WHAT IS CLAIMED IS:

1. A method for booting up a multiple function device, the method comprises:

detecting activation of the multiple function device;

retrieving a first boot algorithm from read only memory

of the multiple function device in response to

detecting the activation of the multiple function device;

executing the first boot algorithm based on booting

inputs to identify a location of a second boot algorithm;

determining whether the second boot algorithm is stored at the identified location;

determining whether the second boot algorithm is

executable when the second boot algorithm is stored at the identified location; and

executing the second boot algorithm to retrieve one of

a plurality of functional algorithms when the second boot algorithm is executable.

2. The method of Claim 1 further comprises:

determining whether the multiple function device is
operably coupled to a host when the second boot
algorithm is not stored at the identified location;

5 downloading a functional algorithm selected from the
plurality of functional algorithms prior to
expiration of a time out period when the multiple
function device is operably coupled to the host;
and

10 shutting down the multiple function device after
expiration of a time out period when the multiple
function device is not operably coupled to the
host.

3. The method of Claim 2 further comprises:

determining whether the multiple function device is
operably coupled to a host when the second boot
algorithm is not executable;

5 downloading a functional algorithm selected from the
plurality of functional algorithms prior to
expiration of a time out period when the multiple
function device is operably coupled to the host;
and

10 shutting down the multiple function device after
expiration of a time out period when the multiple
function device is not operably coupled to the
host.

15 4. The method of Claim 3 wherein the plurality of
functional algorithms comprises at least two of:

a digital audio player;

a file storage;

a digital multimedia player;

20 an extended memory device;

a digital audio recorder;

a digital multimedia recorder;

a personal data assistant; and

an extended memory device with a set of instructions to

25 repair the second boot algorithm.

5 5. The method of Claim 2 further comprising monitoring for
a change in status of an operable connection between the multiple
function device and the host, wherein when the change occurs, the
process for booting up the multiple function device restarts.

10 6. The method of Claim 5, wherein, prior to the change,
the status of the operable connection is in a 1st external state,
and, following the change, the operable connection is in a 2nd
external state.

15 7. The method of Claim 1, wherein the booting inputs
comprise boot pins of an integrated circuit of the multiple
function device, wherein input stimuli on the boot pins
identifies an access port of the integrated circuit corresponding
to the location of the second boot algorithm, wherein the access
port includes at least one of: a universal serial bus (USB)
interface, a flash memory interface, an electronically
programmable read only memory (EPROM) interface, a multi-wire
20 interface, and a hard drive interface.

25 8. The method of Claim 6, wherein in the 1st external
state the multiple function device is operably coupled to the
host and wherein in the 2nd external state the multiple function
device is not operably coupled to the host.

9. The method of Claim 6, wherein in the 1st external state the multiple function device is not operably coupled to the host and wherein in the 2nd external state the multiple function is operably coupled to the host.

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10. The method of Claim 6, wherein in the 1st external state the multiple function device is operably coupled to the host and wherein in the 2nd external state the multiple function device is operably coupled to a second host.

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11. The method of Claim 1, wherein the booting inputs comprise boot pins of an integrated circuit of the multiple function device, wherein input stimuli on the boot pins identifies an access port of the integrated circuit corresponding to the location of the second boot algorithm, wherein the access port includes at least one of: a universal serial bus (USB) interface, a flash memory interface, an electronically programmable read only memory (EPROM) interface, a multi-wire interface, and a hard drive interface.

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12. A method for booting up a multiple function handheld device, the method comprises:

retrieving a first boot algorithm from read only memory of the multiple function handheld device;

5 executing the first boot algorithm to access a second boot algorithm;

determining whether the second boot algorithm is executable; and

10 when the second boot algorithm is executable, executing the second boot algorithm to retrieve one of a plurality of functional algorithms.

13. The method of Claim 12, further comprises:

15 waiting to operably couple with a host when the second boot algorithm is not executable; and

downloading one of the plurality of functional algorithms when operably coupled.

20 14. The method of Claim 13, wherein the second boot algorithm is not executable because the second boot algorithm is not stored at a specified location.

25 15. The method of Claim 13, wherein booting inputs identify the specified location.

16. The method of Claim 15, wherein the booting inputs
comprise boot pins of an integrated circuit of the multiple
function device, wherein input stimuli on the boot pins
identifies an access port of the integrated circuit corresponding
to the location of the second boot algorithm, wherein the access
port includes at least one of: a universal serial bus (USB)
interface, a flash memory interface, an electronically
programmable read only memory (EPROM) interface, a multi-wire
interface, and a hard drive interface.

17. The method of Claim 13, wherein the second boot
algorithm is not executable because the second boot algorithm is
corrupt.

18. The method of Claim 13, further comprises shutting down
the multiple function device after expiration of a time out
period when the multiple function device is not operably coupled
to the host.

19. The method of Claim 13, wherein the plurality of functional algorithms comprises at least two of:

a digital audio player;

a file storage;

5 a digital multimedia player;

an extended memory device;

a digital audio recorder;

a digital multimedia recorder;

a personal data assistant; and

10 an extended memory device with a set of instructions to repair the second boot algorithm.

20. The method of Claim 13 further comprising monitoring for a change in status of an operable connection between the multiple function handheld device and the host, wherein when the change occurs, the method of booting up the multiple function handheld device restarts.

21. The method of Claim 20, wherein, prior to the change, the status of the operable connection is in a 1st external state, and, following the change, the operable connection is in a 2nd external state.

22. An apparatus for booting up a multiple function device,
the apparatus comprises:

processing module;

read only memory; and

memory, wherein the processing module functions to:

detect activation of the multiple function device;

retrieve a first boot algorithm from the read only
memory in response to detecting the activation
of the multiple function device;

execute the first boot algorithm based on booting
inputs to identify a location of a second boot
algorithm;

determine whether the second boot algorithm is
stored at the identified location;

determine whether the second boot algorithm is
executable when the second boot algorithm is
stored at the identified location; and

execute the second boot algorithm to retrieve one
of a plurality of functional algorithms when
the second boot algorithm is executable.

23. The apparatus of Claim 22, wherein the processing
module further functions to:

determine whether the multiple function device is
operably coupled to a host when the second boot
algorithm is not stored at the identified location;
download a functional algorithm selected from the
plurality of functional algorithms prior to
expiration of a time out period when the multiple
function device is operably coupled to the host;
and
shut down the multiple function device after expiration
of a time out period when the multiple function
device is not operably coupled to the host.

24. The apparatus of Claim 22, wherein the processing
module further functions to:

determine whether the multiple function device is
operably coupled to a host when the second boot
algorithm is not executable;

download a functional algorithm selected from the
plurality of functional algorithms prior to
expiration of a time out period when the multiple
function device is operably coupled to the host;

and

shut down the multiple function device after expiration
of a time out period when the multiple function
device is not operably coupled to the host.

25. The apparatus of Claim 24, wherein the plurality of
functional algorithms comprises at least two of:

a digital audio player;

a file storage;

a digital multimedia player;

an extended memory device;

a digital audio recorder;

a digital multimedia recorder;

a personal data assistant; and

an extended memory device with a set of instructions to

repair the second boot algorithm.

26. The apparatus of Claim 23, wherein the processing module further functions to monitor for a change in status of an operable connection between the multiple function device and the host, wherein when the change occurs, the process for booting up the multiple function device restarts.

27. The apparatus of Claim 26, wherein, prior to the change, the status of the operable connection is in a 1st external state, and, following the change, the operable connection is in a 2nd external state.

28. The apparatus of Claim 27, wherein in the 1st external state the multiple function device is operably coupled to the host and wherein in the 2nd external state the multiple function device is not operably coupled to the host.

29. The apparatus of Claim 28, wherein in the 1st external state the multiple function device is not operably coupled to the host and wherein in the 2nd external state the multiple function device is operably coupled to the host.

30. The apparatus of Claim 29, wherein in the 1st external state the multiple function device is operably coupled to the host and wherein in the 2nd external state the multiple function device is operably coupled to a second host.

31. The apparatus of Claim 22, wherein the booting inputs
comprise boot pins of an integrated circuit of the multiple
function device, wherein input stimuli on the boot pins
5 identifies an access port of the integrated circuit corresponding
to the location of the second boot algorithm, wherein the access
port includes at least one of: a universal serial bus (USB)
interface, a flash memory interface, an electronically
programmable read only memory (EPROM) interface, a multi-wire
10 interface, and a hard drive interface.

32. An apparatus for booting up a multiple function
handheld device, the apparatus comprises:
processing module;
15 read only memory; and
memory, wherein the processing module functions to:
retrieve a first boot algorithm from the read only
memory;
execute the first boot algorithm to access a second
20 boot algorithm;
determine whether the second boot algorithm is
executable; and
when the second boot algorithm is executable,
execute the second boot algorithm to retrieve
25 one of a plurality of functional algorithms.

33. The apparatus of Claim 32, wherein the processing module further functions to:

wait to operably couple with a host when the second

boot algorithm is not executable; and

download one of the plurality of functional algorithms

when operably coupled.

34. The apparatus of Claim 33, wherein the second boot algorithm is not executable because the second boot algorithm is not stored at a specified location.

35. The apparatus of Claim 33, wherein booting inputs identify the specified location.

36. The apparatus of Claim 35, wherein the booting inputs comprise boot pins of an integrated circuit of the multiple function device, wherein input stimuli on the boot pins identifies an access port of the integrated circuit corresponding to the location of the second boot algorithm, wherein the access port includes at least one of: a universal serial bus (USB) interface, a flash memory interface, an electronically programmable read only memory (EPROM) interface, a multi-wire interface, and a hard drive interface.

37. The apparatus of Claim 33, wherein the second boot algorithm is not executable because the second boot algorithm is corrupt.

5 38. The apparatus of Claim 33, wherein the processing module further functions to shut down the multiple function device after expiration of a time out period when the multiple function device is not operably coupled to the host.

10 39. The apparatus of Claim 33, wherein the plurality of functional algorithms comprises at least two of:

 a digital audio player;

 a file storage;

 a digital multimedia player;

15 an extended memory device;

 a digital audio recorder;

 a digital multimedia recorder;

 a personal data assistant; and

 an extended memory device with a set of instructions to

20 repair the second boot algorithm.

40. The apparatus of Claim 32, wherein the processing module further functions to monitoring for a change in status of an operable connection between the multiple function handheld device and the host, wherein when the change occurs, the method of booting up the multiple function handheld device restarts.

41. The apparatus of Claim 40, wherein, prior to the change, the status of the operable connection is in a 1st external state, and, following the change, the operable connection is in a 2nd external state.